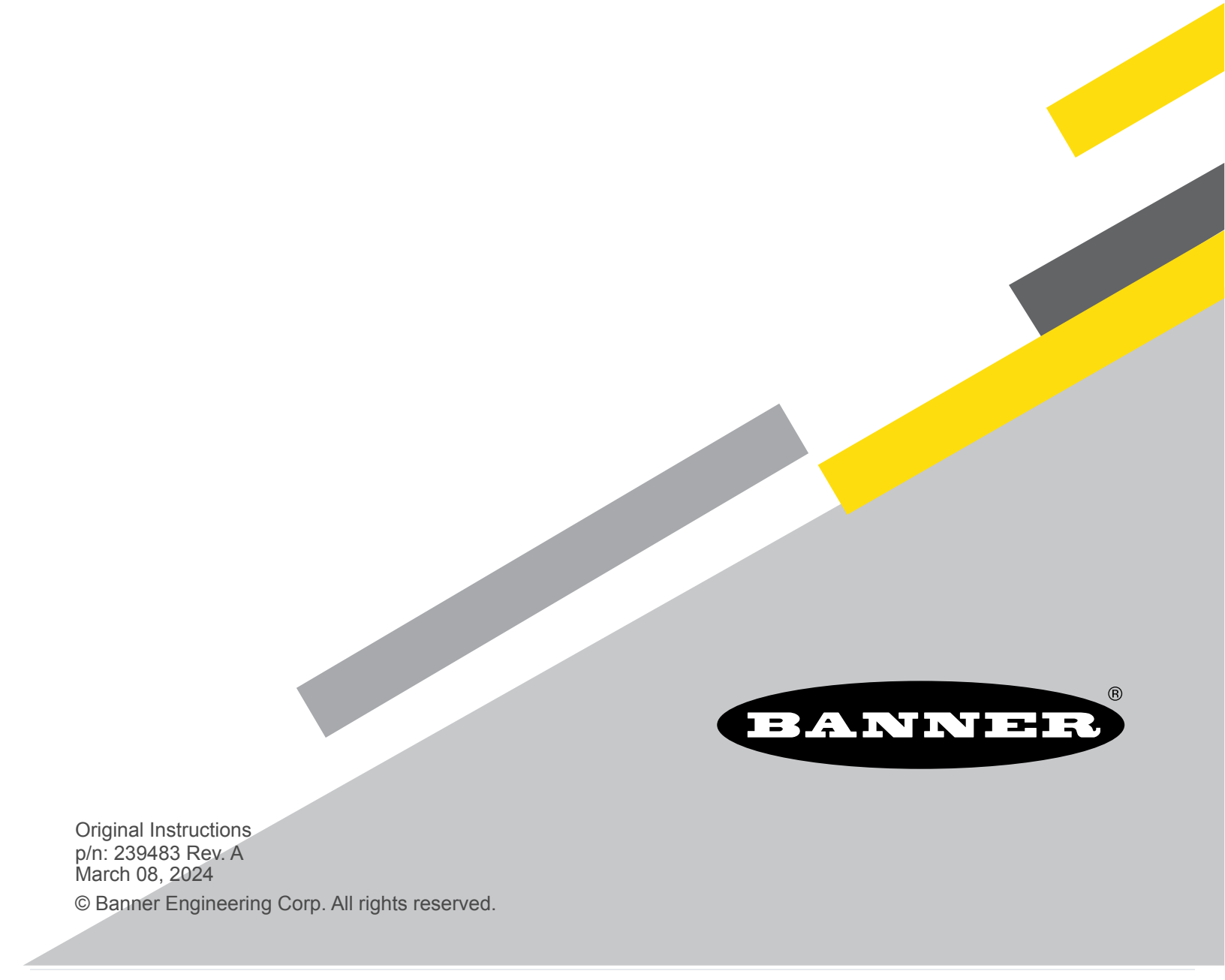
WLF12 Flexible LED Strip Light Instruction Manual



Original Instructions
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March 08, 2024
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ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

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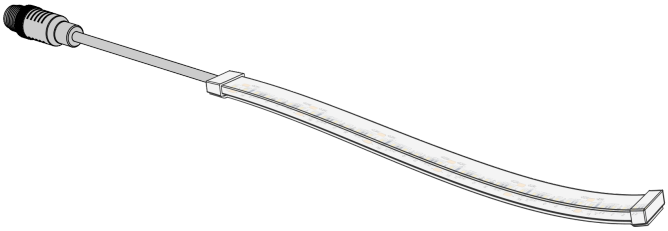
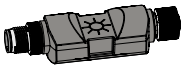
Chapter 1 Features

Banner's WLF12 Flexible LED Strip Light has been engineered to integrate easily into a broad range of industrial applications and environments. Its rugged yet flexible housing can be cut to length, allowing users to customize the light to their ideal shape. The light installs easily with integral high-strength adhesive tape, for creative use on a work station, assembly station, machine, or in a cabinet.

- Provides bright illumination in workspaces, cabinets, and machines with 285 lumens per 300 mm
- Durable, silicone-encapsulated housing provides long-lasting, worry-free performance
- 24 V DC EMI hardened circuitry ensures flicker-free operation and uniform light output
- Plug-and-play standard M12 connections simplify installation by eliminating soldering
- Peel-and-stick installation using high-strength adhesive backing ensures quick and secure mounting
- Six housing lengths (from 300 mm to 4000 mm) can be cut in 50 mm increments to fit exact application specifications
- Rated IP67 and IP69K per DIN 40050-9 to withstand harsh conditions; is dust-resistant and tolerant of high temperatures
- Optional brackets are available for an even more secure installation and positioning
- Both straight and curved installation possible



IMPORTANT: Read the following instructions before operating the light. Please download the complete WLF12 Flexible LED Strip Light technical documentation, available in multiple languages, from www.bannerengineering.com for details on the proper use, applications, Warnings, and installation instructions of this device.

		For PWM dimming, use with the LC15T-127AP2RBGQP or LC25T-AP2RGBQ dimmer modules. For more information, refer to the LC15T In-Line Touch Switch datasheet, p/n 217460, or to the LC25T In-Line Touch Switch datasheet, p/n 231078. For single color models only.

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Chapter 2 Models

Model Key

Family	Cascade	Color	Lighted Length (mm)	Construction	Voltage	Connector[1]
WLF12	**X**	**W**	**300**	**S**	**24**	**QP**
WLF12	X = Non-cascadeable	W = Daylight White (5000K)	300 = 300 mm 600 = 600 mm 1200 = 1200 mm 2000 = 2000 mm 3000 = 3000 mm 4000 = 4000 mm	S = Sealed (IP66, IP67, IP69K per DIN 40050-9)	24 = 24 V DC	QP = 150 mm (6 in) PVC-jacketed cable with a 4-pin M12 male quick-disconnect connector

[1] Models with a quick-disconnect connector require a mating cordset.

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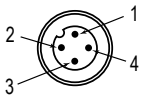
Chapter 3 Wiring

4-pin Male M12 Pinout	Pinout Key and Wiring
	1. Brown - 24 V DC 2. White - Not used 3. Blue - DC Common 4. Black - Not used

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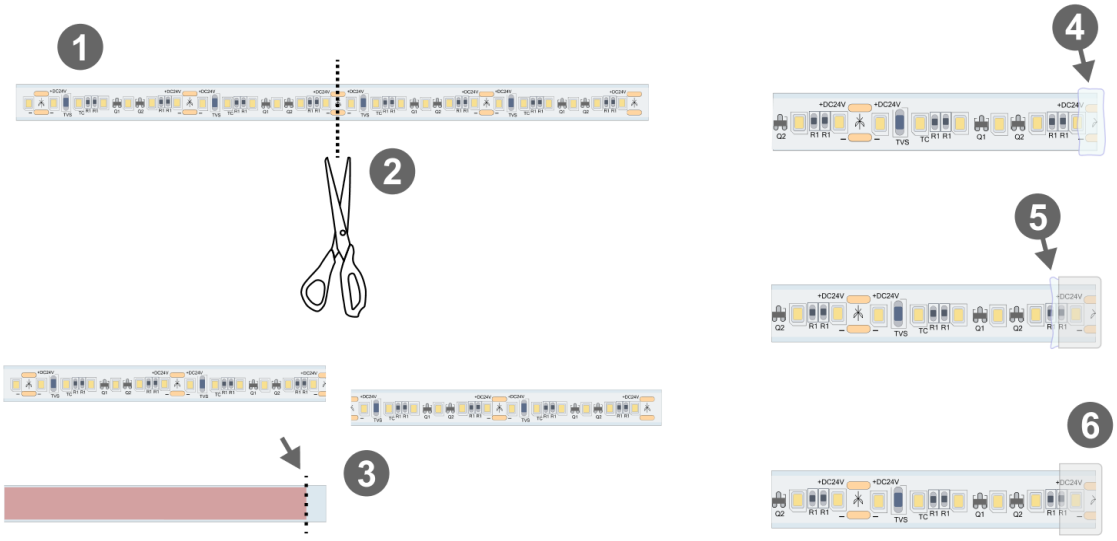
Chapter 4 Cutting Instructions



1. Prepare the flexible LED strip light and remove power.
2. Cut along one of the cutting lines located between each section of six LEDs that are spaced every 50 mm.
3. Peel back part of the tape on the back, and trim it off.
4. Cover the cut end of the light with silicone glue.
5. Take the extra supplied silicone end cap, and put it on the end of the light. Press out excess glue.
6. Clean the light of the excess glue.
7. Allow twenty-four hours for the glue to dry.

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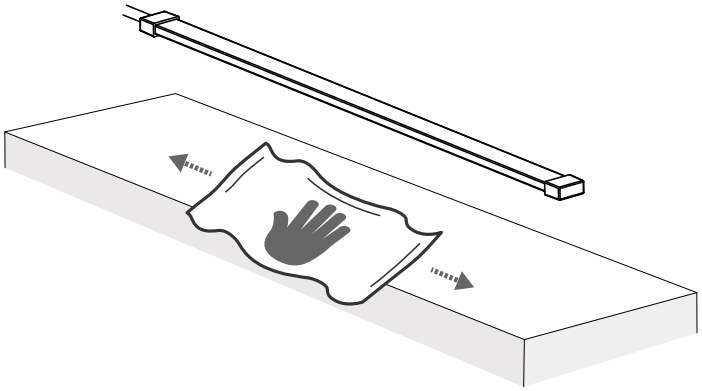
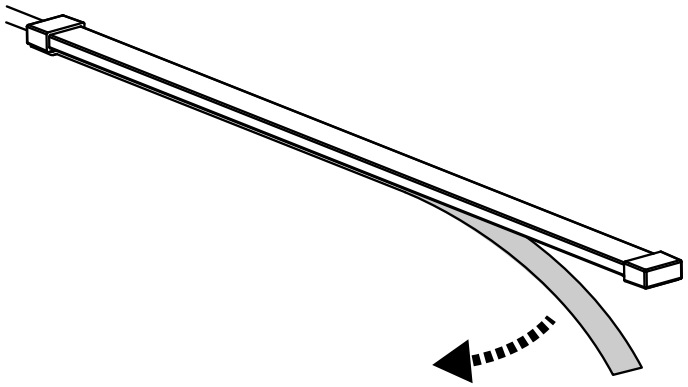
Chapter 5 Mounting Instructions

Before installation: gather all supporting parts and accessories and remove power from the light.

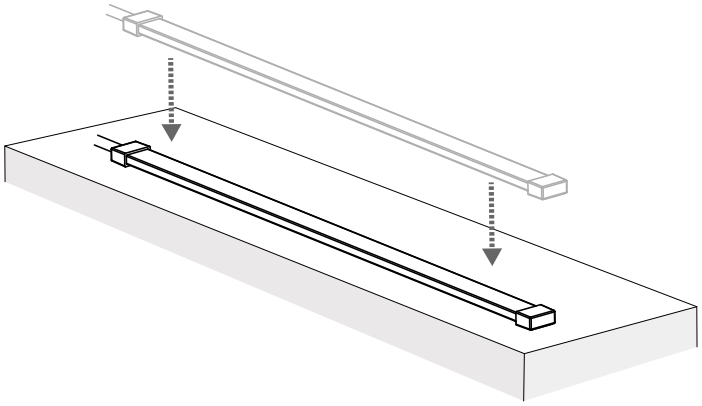
1. Clean the mounting surface. Ensure that the mounting surface and all other mounting installation parts are dry.



2. Remove the protective liner from the tape on the back of the light strip.



3. Align the light strip in the desired installation position, and press the light strip firmly onto the mounting surface.
   After installing the light strip, wait twenty-four hours for the tape to adhere completely to the mounting surface. Do not touch or move the light strip during this time period.



4. Connect the light strip to the power cable.

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5. Confirm that the installation is fastened, the wiring is correct, and that the waterproof connecting wire for docking is tightened.
6. Apply power to the light.

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Chapter 6 Specifications

Supply Voltage

24 V DC (±10%)

Use only with a suitable Class 2 power supply (UL) or SELV power supply (CE)

Supply Current

Light Length	Typical Current (A) at 25 °C	Maximum Current (A) at -20 °C
300 mm	0.14	0.165
600 mm	0.28	0.33
1200 mm	0.56	0.66
2000 mm	0.933	1.1
3000 mm	1.4	1.65
4000 mm	1.867	2.2

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Connections

150 mm (6 in) PVC-jacketed cable with a 4-pin M12 male quick-disconnect connector

Models with a quick-disconnect connector require a mating cordset

Do not spray cable with high-pressure sprayer or cable damage will result.

Operating Temperature

–20 °C to +45 °C (–4 °F to +113 °F)

Storage Temperature

–35 °C to +70 °C (–31 °F to +158 °F)

Environmental Rating

Rated IP66, IP67, IP69K per DIN 40050-9

Suitable for damp locations per UL 2108

Do not spray cable with a high-pressure sprayer or cable damage will result.

Vibration and Mechanical Shock

Vibration: 10 Hz to 55 Hz, 1.0 mm peak-to-peak amplitude per IEC 60068-2-6

Shock: 15G 11 ms duration, half sine wave per IEC 60068-2-27

Construction

Clear silicone outer housing and end caps

Internally silicone-encapsulated LEDs

Very high-bonding strength tape and protective liner pre-applied to the back of the light

Application Notes

When cutting the WLF12, it is important to use the extra end cap supplied along with silicone glue. See "Cutting Instructions" on page 6. Cutting the WLF12 voids the Limited Warranty.

For indoor or outdoor use, if exposure to direct sunlight is avoided.

Do not use in applications with repeated flexing.

Minimum Bend Radius

15 mm

Required Overcurrent Protection

WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to www.bannerengineering.com.

Supply Wiring (AWG)	Required Overcurrent Protection (A)	Supply Wiring (AWG)	Required Overcurrent Protection (A)
20	5.0	26	1.0
22	3.0	28	0.8
24	1.0	30	0.5

Mounting

Use pre-applied, very high-bonding strength tape to mount the WLF12 without mounting brackets, see "Mounting Instructions" on page 7

If needed, use mounting bracket LMBWLF12C, see "Mounting Accessories" on page 11

Certifications

Banner Engineering BV
Park Lane, Culliganlaan 2F bus 3
1831 Diegem, BELGIUM

Turck Banner LTD Blenheim House
Blenheim Court
Wickford, Essex SS11 8YT
GREAT BRITAIN

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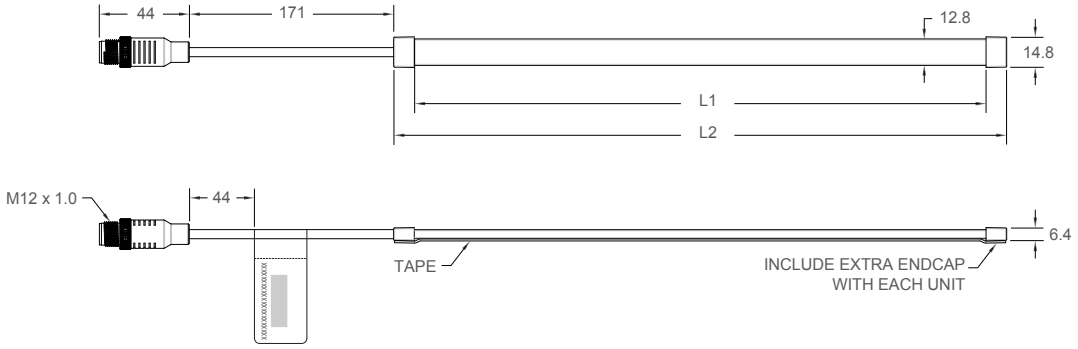
Light Characteristics

Daylight White
Color Temperature (CCT): 5000K (± 300K)
CRI: 80, min.
LED Pitch: 8.33 mm
Beam Angle: 120°

Light Length	Lumens (Typical at 25 °C)[1]
300 mm	285
600 mm	570
1200 mm	1140
2000 mm	1900
3000 mm	2850
4000 mm	3800

Dimensions



Models	L1	L2
WLF12..300..	300 mm (11.81 in)	325 mm (12.8 in)
WLF12..600..	600 mm (23.6 in)	625 mm (24.61 in)
WLF12..1200..	1200 mm (47.24 in)	1225 mm (48.23 in)
WLF12..2000..	2000 mm (78.74 in)	2025 mm (79.72 in)
WLF12..3000..	3000 mm (118.1 in)	3025 mm (119.1 in)
WLF12..4000..	4000 mm (157.5 in)	4025 mm (158.5 in)

[1] Values shown at 25 °C. Current and lumen values decrease 0.4% per 1 °C from ambient. For example, an 1200 mm unit will have a maximum current of 0.66 A at -20 °C and 0.515 A at +45 °C.

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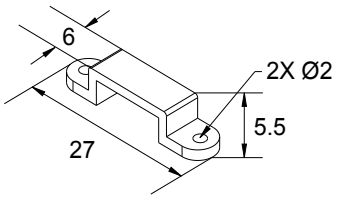
Chapter 7 Accessories

Mounting Accessories

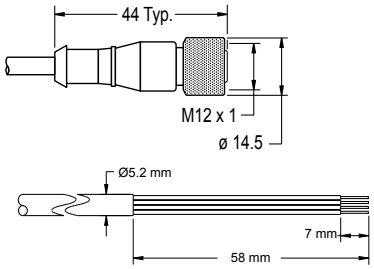
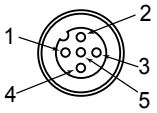
LMBWLF12C

- Set of 10 clamp brackets
- Translucent silicone
- Designed for M3 or No. 4 mounting hardware

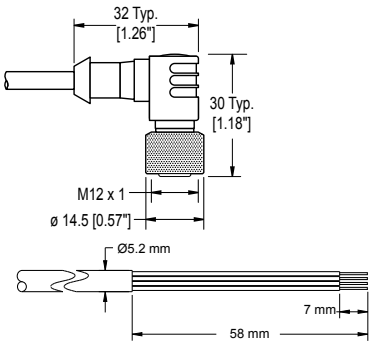
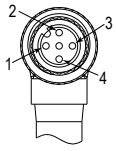


Cordsets

4-Pin Threaded M12 Cordsets—Single Ended

Model	Length	Style	Dimensions	Pinout (Female)	
MQDC-403	1 m (3.28 ft)	Straight			1 = Brown 2 = White 3 = Blue 4 = Black 5 = Not used
MQDC-406	2 m (6.56 ft)				
MQDC-410	3 m (9.8 ft)				
MQDC-415	5 m (16.4 ft)				
MQDC-430	9 m (29.5 ft)				

4-Pin Threaded M12 Cordsets—Single Ended

Model	Length	Style	Dimensions	Pinout (Female)	
MQDC-406RA	2 m (6.56 ft)	Right-Angle			1 = Brown 2 = White 3 = Blue 4 = Black 5 = Not used
MQDC-415RA	5 m (16.4 ft)				
MQDC-430RA	9 m (29.5 ft)				

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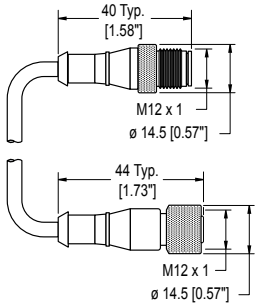
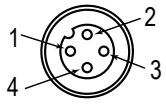
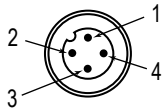
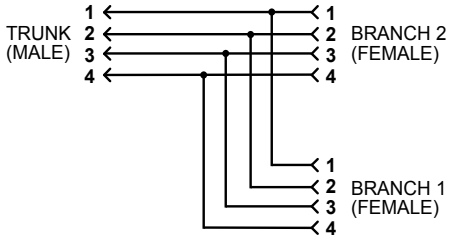
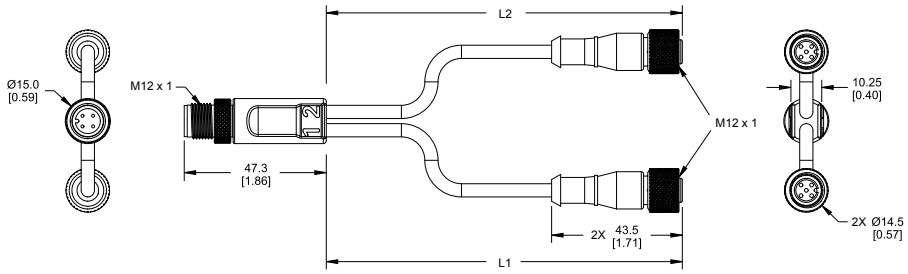
4-Pin Threaded M12 Cordsets—Double Ended				
Model	**Length**	**Style**	**Dimensions**	**Pinout**
MQDEC-401SS	0.31 m (1 ft)	Male Straight/ Female Straight		Female  Male  1 = Brown 2 = White 3 = Blue 4 = Black
MQDEC-402SS	0.6 m (1.97 ft)			
MQDEC-403SS	0.91 m (2.99 ft)			
MQDEC-406SS	1.83 m (6 ft)			
MQDEC-412SS	3.66 m (12 ft)			
MQDEC-415SS	4.58 m (15 ft)			
MQDEC-420SS	6.10 m (20 ft)			
MQDEC-430SS	9.14 m (30.2 ft)			

Splitter Cordsets

4-Pin Threaded M12 Male to 5-Pin Threaded M12 Female Splitter Cordset		
Model	**Branches (Female)**	**Wiring**
S15YB-M124-M124-0.2M	**L1, L2** 2 × 0.2 m (7.9 in)	
		

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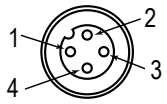
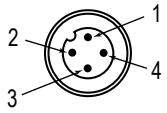
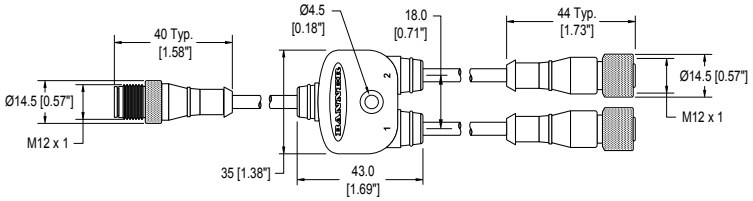
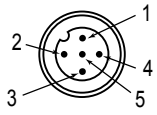
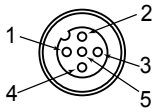
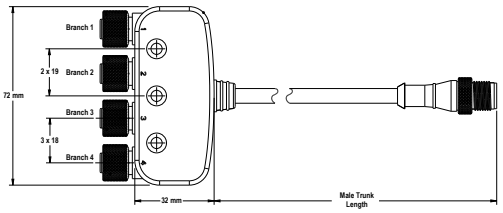
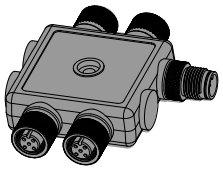
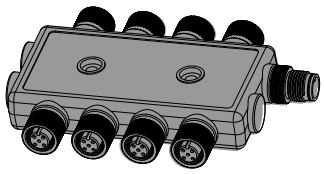
4-Pin Threaded M12 Splitter Cordsets—Flat Junction			
Model	**Branches (Female)**	**Trunk (Male)**	**Pinout**
CSB-M1240M1240	No branch	No trunk	Female  Male  1 = Brown 2 = White 3 = Blue 4 = Black
CSB-M1240M1241	2 × 0.3 m (1 ft)	No trunk	
CSB-M1241M1241		0.31 m (1 ft)	
CSB-M1248M1241		2.44 m (8 ft)	
CSB-M12415M1241		4.57 m (15 ft)	
CSB-M12425M1241		7.60 m (25 ft)	
CSB-UNT425M1241		7.60 m (25 ft) Unterminated	
CSB-M1243M1243	2 × 1 m (3.28 ft)	1 m (3.28 ft)	
			

5-Pin Threaded M12 Splitter Cordset with Flat Junction—Double Ended				
Model	**Trunk (Male)**	**Branches (Female)**	**Pinout (Male)**	**Pinout (Female)**
CSB4-M1251M1250	0.3 m (0.98 ft)	Four (no cable)		
			1 = Brown 2 = White 3 = Blue	4 = Black 5 = Gray

Junction Blocks

R50-4M125-M125Q-P Molded Junction Block • Four integral 5-pin M12 female quick-disconnect connectors • One integral 5-pin M12 male quick-disconnect connector • Parallel wiring	
R95-8M125-M125Q-P Molded Junction Block • Eight integral 5-pin M12 female quick-disconnect connectors • One integral 5-pin M12 male quick-disconnect connector • Parallel wiring	

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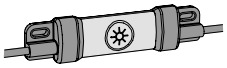
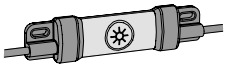
Dimmers and Switches

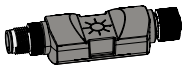
LC15T-127AL2RGQP
- In-line capacitive touch switch with M12 connectors
- On/Off control and illuminated indication
- Rated for up to 30 V DC and 4 A maximum output current
- Rugged and waterproof IP67 housing



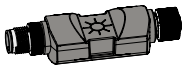
LC15T-127AP2RBGQ
- In-line capacitive touch switch with M12 connectors
- On/Off/Dimming control and illuminated indication
- Rated for up to 30 V DC and 4 A maximum output current
- Rugged and waterproof IP67 housing



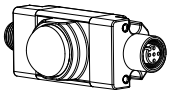
LC25T-AL2RGQ
- In-line capacitive touch switch with M12 connectors
- Used with 2-wire DC devices
- Rated for up to 30 V DC and 4 A maximum output current
- Low profile, rugged, water-resistant IP67 design



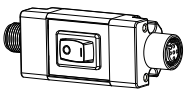
LC25T-AP2RGBQ
- In-line capacitive touch switch with M12 connectors
- Used with 2-wire PWM-controlled devices
- Rated for up to 30 V DC and 4 A maximum output current
- Low profile, rugged, water-resistant IP67 design



WLS28-2MQ
- 2-position in-line motion detector switch with M12 connectors
- Used with 2-wire DC LED lights
- Rated for up to 30 V DC and 4 A maximum output current
- IP50 housing



WLS28-2PBQ
- 3-position in-line switch with M12 connectors
- Used with 3-wire DC LED lights
- Rated for up to 30 V DC and 4 A maximum output current
- IP50 housing



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Power Supplies

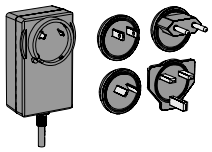
PSW-24-1

- 24 V DC, 1 A Class 2 UL Listed power supply
- 100 V AC to 240 V AC 50/60 Hz input
- 2 m (6.5 ft) PVC cable with M12 quick disconnect
- Includes Type A (US, Canada, Japan, Puerto Rico, Taiwan), Type C (Germany, France, South Korea, Netherlands, Poland, Spain, Turkey), Type G (United Kingdom, Ireland, Singapore, Vietnam), and Type I (China, Australia, New Zealand) AC detachable input plugs



PSW-24-2

- 24 V DC, 2 A Class 2 UL Listed power supply
- 100 V AC to 240 V AC 50/60 Hz input
- 3.5 m (11.5 ft) PVC cable with M12 quick disconnect
- Includes Type A (US, Canada, Japan, Puerto Rico, Taiwan), Type C (Germany, France, South Korea, Netherlands, Poland, Spain, Turkey), Type G (United Kingdom, Ireland, Singapore, Vietnam), and Type I (China, Australia, New Zealand) AC detachable input plugs



PSD-24-4

- 90 to 264 V AC 50/60 Hz input
- Includes a 1.8 m (6 ft) US style 5-15P input plug
- 24 V DC UL Listed Class 2 M12 connector output
- 4 A total current



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Chapter Contents

Chapter 8 Banner Engineering Corp Limited Warranty

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